Earth Systems
Environmental Engineering

March 1, 2022

Via Email/Sharefile

Mr. Sam Abdellatif
Land and Redevelopment Programs Branch
US Environmental Protection Agency Region 2
290 Broadway, 25th Floor
New York, New York 10007-1866

Re: 9/23/2021 Response to CSM Comment Letter
Hess Corporation Former Port Reading Complex (HC-PR)
750 Cliff Road
Woodbridge, Middlesex County, New Jersey
NJDEP PI# 006148
ISRA Case No. E20130449
EPA ID No. NJD045445483

Dear Mr. Abdellatif:

Earth Systems, Inc. (Earth Systems) has prepared this letter on behalf of Hess Corporation (Hess) regarding the September 23, 2021 response letter provided by the New Jersey Department of Environmental Protection (NJDEP) and Environmental Protection Agency (EPA) relating to the Conceptual Site Model (CSM) submitted on March 29, 2021. There were multiple attempts to coordinate a meeting regarding this letter in 2021; however, due to scheduling conflicts a meeting wasn't held until January 21, 2022. Based on the comments below and discussions had during the meeting, once this response is approved the following immediate revisions will be made to the CSM:

- Figure or Figures depicting historic temporary well locations, temporary well observations, and applicable temporary well data will be included (See Response 6)
- Boring logs utilized to prepare the cross-section figures will be included with the CSM and aquifer interval descriptions will be revised (if necessary) to make sure

they are consistent in the text of the report and the included figures (see Response 14)
- NJDEP/EPA Approved July 8, 2021 AOC group list and figures will be included with the CSM (see Response 15)
- Groundwater contour maps for 2018 and 2020 and a USGS Topographic Map will be included (see Response 17)
- Table E-1 will be revised to include the requested information (see Response 18)

As explained above, these immediate changes will be made to the CSM and the CSM will be retitled as "Version 2" and will include the revision date. The CSM will continue to be updated as additional data is collected as part of the ongoing Remedial Investigation (RI) activities being conducted at the Site. At this time, we do not anticipate submitting a revised CSM (beyond Version 2) until the conclusion of all RI activities.

NJDEP Comments & Earth Systems/Hess Responses

NJDEP Comment 1: Section 1.3.5, Historic fill: The CSM includes numerous sections discussing historic fill and fill placement. All of the Department's prior comments to Hess regarding historic fill are applicable to the CSM. Note: Hess has previously noted that a historic fill evaluation will be submitted but has not been submitted at the time of review.

Earth Systems/Hess Response 1: Earth Systems/Hess confirms that a Sitewide historic fill evaluation is in process and will be submitted once all relevant soil information is compiled at the completion of RI activities.

NJDEP Comment 2: Section 2.2, Section 6 and Section 3, Summary of Impacted Media: Soil: Free and residual product must comply with Tech Regs, NJAC 7:26E-5.1(e).

Earth Systems/Hess Response 2: Earth Systems/Hess will comply with NJAC 7:26E-5.1(e) which states that, "*The person responsible for conducting the remediation shall treat or remove free product and residual product to the extent practicable, or contain free product and residual product when treatment or removal is not practicable. Monitored natural attenuation of free product and residual product is prohibited*."

As specifically stated in **Section 6.1** of the CSM, "Additional investigations to delineate, characterize, and remediate the LNAPL will continue…" In addition, **Section 7.0** of the CSM states that, "*Once delineation is complete, the remedial strategy for the Site may include a combination of source removal (hot spot excavations), in situ treatment, and the use of both institutional and engineering controls*."

NJDEP Comment 3: Section 5.0, Soils: Hess is reminded that per NJAC 7:26E-4.2, if contamination extends beyond the property boundary, this needs to be delineated and addressed. The Department is unsure whether this overall issue has been investigated by Hess. Please confirm if delineation off site has been conducted.

Earth Systems/Hess Response 3: Soil delineation, as part of the various RI workplans,

is currently ongoing for multiple AOCs. Off-site soil and groundwater samples were collected in October 2019 as part of the initial AOC 12 investigation activities. Off-site soil delineation will be completed by the conclusion of the RI.

NJDEP Comment 4: Section 5.3, Vapor Intrusion: The Department recalls providing feedback on a vapor intrusion study that Hess had conducted a 2020 summer sampling event and that the season sampled did not conform with the Site Remediation Program Vapor Intrusion Technical Guidance document. Furthermore, at the time of this review, The Department has not reviewed the vapor intrusion document submitted after the CSM. Therefore, The Department withholds comment and is neither agreeing or disagreeing with Hess's summary and evaluation of this pathway.

Earth Systems/Hess Response 4: As summarized in the CSM, multiple indoor air sampling events were conducted (July 2020 and March 2021) and the data provided to the NJDEP and EPA. No exceedances of NJDEP Indoor Air Standards were detected. As discussed during the October 2021 Quarterly NJDEP/EPA meeting, the full data deliverable package for the air sampling events will be submitted with the final Remedial Investigation Report (RIR) for AOC 11a – Administration Building.

NJDEP Comment 5: The CSM indicates that most site source and plume areas can be addressed through capping, institutional controls (deed restrictions, CEA), and Monitored Natural Attenuation mechanisms based on ground water use, vapor intrusion, surface water and ecological evaluation receptor evaluations. These may not be appropriate final remedies and further investigation is needed before a determination can be made. The CSM investigation goals should include delineation of sources of ground water impacts as well as migration paths and potential receptors. Natural Source Zone Depletion (NSZD) of free and residual NAPL is not an approved final remedy for any NAPL areas pursuant to the Tech Regs at N.J.A.C. 7:26E-5.1(e), the Remediation Standards at N.J.A.C. 7:26D-2.2, and NJDEP Technical Guidance (Monitored Natural Attenuation and LNAPL IRM).

Earth Systems/Hess Response 5: As specifically stated in **Section 7.0** of the CSM, "*Once delineation is complete, the remedial strategy for the Site may include a combination of source removal (hot spot excavations), in situ treatment, and the use of both institutional and engineering controls*."

NJDEP Comment 6: Evaluations and data representations on figures focused on monitor well data: Conclusions regarding "limited detections" at the site do not reflect: 1) a complete remedial investigation and ecological evaluation, and 2) all site boring logs and temporary well data to date. Priorities based on LNAPL and elevated ground water COC results in the 2016 review of the 2015 SIR remain to be scheduled and implemented. Note: A site wide historic sample location figure was not included with the CSM.

Earth Systems/Hess Response 6: Earth Systems/Hess is unclear on the meaning of the following statement, "*Priorities based on LNAPL and elevated ground water COC results in the 2016 review of the 2015 SIR remain to be scheduled and implemented,"* since RI activities of multiple high priority AOCs are currently in process. The RI of several high priority AOCs is currently being conducted "At Risk." Please note that "At Risk" work refers to investigation activities that are proposed in a RIW that is submitted to the NJDEP

and EPA for review. If the NJDEP and EPA are unable to complete a review of the RIW within a 90-day timeframe, the proposed investigation activities may be conducted "At Risk" once the allotted review timeframe concludes. At the completion of all RI activities (once delineation is complete), a final RIR will be submitted that will document all investigation data and observations.

The CSM included an evaluation of all Site soil and groundwater data (from monitoring wells) but not temporary well data. Temporary wells are an investigative screening tool utilized to determine future monitoring well placement. However, as discussed during the January 21, 2021 meeting, Earth Systems/Hess will include a figure depicting historic temporary well locations, observations, and applicable data in the revised CSM.

NJDEP Comment 7: The CSM includes a Class IIB aquifer classification discussion. Class IIB aquifers are described at N.J.A.C. 7:9C-1.5(e). The applicable ground water quality standards are the same as Class IIA aquifers (N.J.A.C. 7:9C-1.7(d)). Class IIB aquifer classifications are established through the rule making process at N.J.A.C. 7:9C-1.10, and there are currently no Class IIB aquifers in New Jersey. Unless Hess proposes to create a Class IIB aquifer proposal, it doesn't need to be in the CSM. The majority of the site is currently identified as a Class IIA aquifer, but parts of the site or aquifer units may meet Class IIIB criteria (Total Dissolved Solids (TDS) exceeds 5,000 mg/L or chloride exceeds 3,000 mg/L due to natural conditions). However, regardless of classification, remediation of the sources of ground water contamination is required to address the "adverse impact of contamination to ground water itself" (N.J.A.C. 7:26D-2.2(a)4.iv(1)). Receptor evaluations may support MNA of dissolved plumes associated with a source, or if additional remediation of ground water plumes is necessary.

Earth Systems/Hess Response 7: Earth Systems/Hess understands that reclassification of groundwater areas shall be accomplished through rulemaking in accordance with the Administrative Procedure Act, N.J.S.A. 52:14B-1 et seq. and reserves the right to pursue this option. Consequently, Hess will continue to include a Class IIB aquifer classification discussion within the CSM until a decision on the issue has been determined.

NJDEP Comment 8: The completion of the investigation and implemented remedial actions will show if there are multiple AOCs with distinct source areas/plumes. This could result in more than one CEA/WRA at the site.

Earth Systems/Hess Response 8: Earth Systems/Hess understands that more than one CEA/WRA may be established as part of the final remedy for the Site.

NJDEP Comment 9: Regional geology information and considerations are beneficial to the investigation. AOCs will still have to be investigated to delineate source areas and horizontal and vertical plume migration. Elevation information for boring 312 and SP-2, and FA-2 and FA-4, should be confirmed based on ground surface elevation changes at apparently flat areas.

Earth Systems/Hess Response 9: RI activities are currently being conducted at the Site to complete both soil and groundwater delineation. However, there is currently a good

understanding of existing groundwater plumes on the site (as depicted on Figures 7.1 through 7.20 of the CSM). Information and data obtained from current/future RI activities will be used to further refine the size and potential migration of Site groundwater plumes.

The following is the elevation information from the licensed surveyor for the above specified wells:

Elevation Data (Obtained from Form B's)

- SP-2 (Survey Date 12/21/2017) – ground elevation 10.36, elevation of inner casing 10.18
- FA-2 (Survey Date 2/18/2020) – ground elevation 10.79, elevation of inner casing 10.39
- FA-4 (Survey Date 2/18/2020) – ground elevation 11.38, elevation of inner casing 10.98

Groundwater elevations will continue to be monitored in these wells to evaluate the elevation difference between monitoring wells FA-2 and FA-3.

NJDEP Comment 10: The influence of the bulkhead on flow conditions will need additional information on the landward extent/construction of the bulkhead, type of fill behind the bulkhead, etc. TL-3 has a lower ground water elevation than surrounding wells as opposed to higher, so flow is happening in the vicinity of the bulkhead. The concept of a "zone of stagnation" is not accepted at this time.

Earth Systems/Hess Response 10: Earth Systems/Hess will continue to monitor flow conditions in the area of the bulkhead. Earth Systems/Hess will also determine if there are any additional ways to determine bulkhead construction details and safely determine the type of fill material used behind the bulkhead, without compromising the integrity of the bulkhead.

NJDEP Comment 11: The Site History portion focuses on the petroleum product received and processed to market products. It is recommended that additional "Site Histories" be provided, such as for: 1) Fuel Additives used (e.g., TEL, oxygenates, alcohols, detergents); 2) Refinery Waste and Wastewater Generation and Management; 3) Fire-Fighting Foams; 4) Chlorinated Solvents (e.g., Hess uses- maintenance, at Vapor Recovery Units, prior property uses); etc. This could help focus the areas where potential COCs would require different or additional analytical methods.

Earth Systems/Hess Response 11: Available information regarding Site operations has been included in the Preliminary Assessment and CSM Reports. Historic information will also be included in future RIRs for the various AOC groups, where available. If operations information is not available, a conservative sampling approach will continue to be utilized and samples analyzed for the full EPA Target Compound List/Target Analyte List (TCL/TAL) plus Tentatively Identified Compounds (TICs), hexavalent chromium, extractable petroleum hydrocarbons (EPH), and pH to ensure that all potential contaminants are detected, as specified in NJAC 7:26E-2.1(c)ii.

NJDEP Comment 12: Please note, Remediation Standards were recently amended and

include Migration to Ground Water SRS.

Earth Systems/Hess Response 12: Earth Systems/Hess will utilize the newly promulgated Migration to Groundwater SRS for data evaluation purposes in future versions of the CSM.

NJDEP Comment 13: There may be a mistake in the date of the dike construction. Based on aerial photos it was between 1970 – 1972, not between 1966 – 1969. Please confirm the estimated date of construction.

Earth Systems/Hess Response 13: Earth Systems/Hess reviewed the historic aerial photographs and based on that review, the detention basin was created at some point after 1966 and prior to 1970.

NJDEP Comment 14: Include boring logs for the cross sections as an appendix, and clarify the aquifer intervals for shallow, intermediate, and deep aquifer units that vary between text locations and figures.

Earth Systems/Hess Response 14: Hess/Earth Systems will include the boring logs for the cross sections as an appendix and revise the CSM to make sure the groundwater intervals defined in the text of the report match the intervals specified on the figures.

NJDEP Comment 15: Attachment A: The AOC list and RMU list is not consistent with the previously approved "AOC Groupings" and "AOC Grouping Table". Some AOCs are excluded from the appendix. Please revise Attachment A so that it matches the previously approved "AOC Groupings and "AOC Grouping Table".

Earth Systems/Hess Response 15: The CSM was submitted on March 29, 2021, prior to the creation of the approved "AOC Groups" on July 8, 2021. The July 8, 2021 approved AOC grouping list and figures will be included with the revised CSM.

NJDEP Comment 16: Attachment B: HS-1 description should include a summary of the extent of impact to surface waters and wetlands (on-site, off-site), migration mitigation, and product recovery. Other historic spill information should include the data from ground water samples collected as part of a spill response. Please confirm there have been no releases between 2010 and sale of property, and the property sale date.

Earth Systems/Hess Response 16: Attachment B provides a brief summary of historic spill information for the Site. Detailed information regarding HS-1 was included in the AOC 12 – Detention Basin and Smith Creek Remedial Investigation Workplan (RIW) dated July 30, 2021 and will be included in the RIR for that AOC as well. A review of historic spill documentation will be conducted, and Attachment B revised if additional spills were reported between 2010 and the sale of the property to Buckeye.

NJDEP Comment 17: Attachment C: Additional figures are recommended and will help the Department in future reviews of documents:

- Site-wide sample summary figure (soil borings, temporary wells, monitor wells)

    - Figures depicting site soil and groundwater impacts were included with the CSM, an additional figure(s) will be added to the revised CSM that will depict historic temporary well point locations, observations, and applicable data
- Backwash lagoon is not shown, the location of the oily water lagoon, piping and treatment plant from schematic drawing needs to be reviewed and corrected
    - Please note that there is more than one polygon identified as "AOC 13 – Oily Water Lagoons" on the AOC figure. Also, the AOC groupings and maps approved in July 2021 will replace the AOC figure utilized in the CSM
- Additional contour maps (2018, 2020)
    - The requested contour maps will be added to the revised CSM
- Site surface elevation/topography figure
    - A USGS Topographic Map will be included with the revised CSM
- Current and historic discharge locations to surface water bodies
    - Historic discharge location to AOC 12 – Detention basin is depicted on Figure 3.4
- Stilling well locations, gauge at Head of Smith Creek Basin
    - There are currently no stilling wells on Site. All monitoring well locations are included on the CSM figures. All stream gauge locations will be added to the contour maps.
- Location of the Port Reading pipeline(s) through the site – connections with Administration Building sumps; location with respect to the AOC 10 interceptor trench and pathway through dike to the Head of Smith Creek Basin
    - Petroleum pipelines and underground utility pipelines are depicted on the AOC maps. Please note that there is no piping connected to the interceptor trench or the administration building sumps.
- Soil borings and TWs with evidence of free or residual LNAPL.
    - The requested figure will be included with the revised CSM.
- Soil borings with EPH, VOC, SVOC, etc. data from contaminated intervals. Not all soil samples are from boring intervals with potential contamination.
    - Figures 6.1 through 6.5 depict soil exceedances based on soil boring locations that had samples that exceeded applicable standards.
- Temporary well VOC, SVOC, metal, etc. data locations, isopleths.
    - A figure depicting temporary well locations, VOC data, and SVOC data will be included with the revised CSM.
- Free phase LNAPL locations from 1995 CMP.
    - The 1995 CMP is a report that was prepared 37 years ago and was revised multiple times over the years. The CSM included a

table summarizing recent LNAPL trends for the last 5 years from the established well network on the Site. The NJDEP has a copy of the 1995 CMP available to them in the portal.

- Isopleth figure ground water contours did not reflect 2019 contours
  - The isopleth figures factor both the chemical compound and groundwater elevations.

Earth Systems/Hess Response 17: See above responses to individual bullet items.

NJDEP Comment 18: Attachment E- Table E-1: include well completion intervals bgs, msl, and a ground water elevation column.

Earth Systems/Hess Response 18: Earth Systems/Hess will revise Table E-1 to include the above requested information.

NJDEP Comment 19: Attachment F: limited to 2015-2020 data and limited to monitor wells only. Attachment F should include all data to date including temporary wells.

Earth Systems/Hess Response 19: Attachment F is a summary table of LNAPL levels and groundwater recovery volumes, which is only applicable to Site monitoring wells and the interceptor trench. As discussed in Response 6, a figure will be added to the revised CSM which will depict historic temporary well points and if LNAPL was observed during the installation of the temporary well or observed on the groundwater table. Earth Systems/Hess would like to stress that temporary wells are an investigative screening tool used to determine monitoring well placement and that the best assessment of current groundwater impacts should be based on the extensive well network currently present on the Site.

Should you have any questions or require additional clarification or information, please contact me at 732-739-6444 or via e-mail at ablake@earthsys.net. If you have any questions relating to the project and schedule moving forward, you can also contact Mr. John Schenkewitz of Hess Corporation at 609-406-3969.

Sincerely,

Amy Blake
Sr. Project Manager

c. Ms. Julia Galayda, NJDEP Case Manager (via email/Sharefile)
Mr. John Schenkewitz – Hess Corporation (via e-mail)
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